

Application No. 09/490,631
Response to Office Action

Customer No. 01933

Listing of Claims:

Claims 1-24 (Canceled).

25. (New) An electric network simulating method comprising:
defining electric functions of a plurality of circuit
elements as a plurality of element cells;

5 defining intersections of wiring lines at which at least
three circuit elements are connected as intersection cells;
defining a wiring line in which the plurality of elements
cells are connected as a pipe;

defining a wiring line in which the element cells and an
intersection cell are connected as a pipe;

10 defining a wiring line in which the intersection cells are
connected as a pipe;

setting a rule of transfer of particle models between a
plurality of pipes connected to the element cells and a rule of
transfer of particle models between a plurality of pipes
15 connected to the intersection cells;

performing transfers of the particle models between the
plurality of pipes connected to the element cells based on the
rule set with respect to the plurality of element cells, and
performing transfers of the particle models between the plurality

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20 of pipes connected to the intersection cells based on the rule
set with respect to the intersection cells;

repeating the transfers until variation in number of
particle models and variation in quantity of movement of the
particle models, in the plurality of pipes, converge; and

25 determining the number of particle models and the quantity
of movement of the particle models in the plurality of pipes.

26. (New) The electric network simulating method according
to claim 25, further comprising acquiring voltages of the element
cells with reference to the number of particle models in the
pipes and acquiring currents of the element cells with reference
5 to the quantity of movement of the particle models in the pipes.

27. (New) An electric network simulating apparatus
comprising:

a defining unit configured to (i) define electric functions
of a plurality of circuit elements as a plurality of element
5 cells, (ii) define intersections of wiring lines at which three
or more circuit elements are connected as intersection cells,
(iii) define a wiring line in which the plurality of element
cells are connected as a pipe, (iv) define a wiring line in which
the element cells and an intersection cell are connected as a

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10 pipe, and (v) define a wiring line in which the intersection
cells are connected as a pipe;

a setting unit configured to set a rule of transfer of
particle models between a plurality of pipes connected to the
element cells and a rule of transfer of particle models between a
15 plurality of pipes connected to an intersection cell; and

a determining unit configured to (i) perform transfers of
the particle models between the plurality of pipes connected to
the element cells based on the rule set with respect to the
plurality of element cells, and perform transfers of the particle
20 models between the plurality of pipes connected to the
intersection cells based on the rule set with respect to the
intersection cells; (ii) repeat the transfers until variation in
number of particle models and variation in quantity of movement
of the particle models, in the plurality of pipes, converge, and
25 (iii) determine the number of particle models and the quantity of
movement of the particle models, in the plurality of pipes.

28. (New) The electric network simulating apparatus
according to claim 27, further comprising a second determining
unit configured to determine voltages of the element cells with
reference to the number of particle models in the pipes and
5 determine currents of the element cells with reference to the
quantity of movement of the particle models in the pipes.

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29. (New) A storage medium storing a simulation program loaded and activated in a computer device, the program activating the computer device to perform the steps of:

defining electric functions of a plurality of circuit
5 elements as a plurality of element cells;

defining intersections of wiring lines at which at least
three circuit elements are connected as intersection cells;

defining a wiring line in which the plurality of elements
cells are connected as a pipe;

10 defining a wiring line in which the element cells and an
intersection cell are connected as a pipe;

defining a wiring line in which the intersection cells are
connected as a pipe;

15 setting a rule of transfer of particle models between a
plurality of pipes connected to the element cells and a rule of
transfer of particle models between a plurality of pipes
connected to the intersection cells;

20 performing transfers of the particle models between the
plurality of pipes connected to the element cells based on the
rule set with respect to the plurality of element cells, and
performing transfers of the particle models between the plurality
of pipes connected to the intersection cells based on the rule
set with respect to the intersection cells;

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repeating the transfers until variation in number of
25 particle models and variation in quantity of movement of the
particle models, in the plurality of pipes, converge; and
determining the number of particle models and the quantity
of movement of the particle models in the plurality of pipes.

30. (New) The storage medium according to claim 29, wherein
the program activating the computer device further generates
determining voltages of the element cells with reference to the
number of particle models in the pipes and determining currents
5 of the element cells with reference to the quantity of movement
of the particle models in the pipes.